

Notice of Allowability

Application No.

10/798,880

Examiner

Chukwuma O. Nwaonicha

Applicant(s)

BROWN ET AL.

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 28 February 2006.
2. ☒ The allowed claim(s) is/are 1-12, 14-35, 37 and 42-48 (now renumbered 1-42, respectively).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


JOHANN RICHTER
SUPERVISORY PATENT EXAMINER
GROUP 1200

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 28 February 2006.
2. Claims 1-12, 14-35, 37 and 42-48 are under active consideration in the instant application.
3. **The Election/Restrictions dated 11/3/06 has been vacated and a new Office Action follows.**

Allowed Claims

Claims 1-12, 14-35, 37 and 42-48 are allowable over the prior art of record.

Reason For Allowance

The following is an examiner's statement of reasons for allowance: Applicants claim a method for decomposing a neutral organophosphorus compound comprising subjecting said neutral organophosphorus compound to an alcoholysis reaction in a substantially non-aqueous medium comprising non-radioactive metal ions selected from the group consisting of lanthanide series metal ions, transition metal ions, and combination thereof, and at least a trace amount of alkoxide ions; wherein all the variables are as defined in the claims. The method was neither found to be obvious nor anticipated by the prior art of record.

The closest prior arts are Franke et al., {WO 02/072206 A1 same as US 2004/0096415 A1} and Neverov et al., {La³⁺-Catalyzed Methanolysis of Phosphate Diesters. Remarkable Rate Acceleration of the Methanolysis of Diphenyl Phosphate, Methyl *p*-Nitrophenyl Phosphate, and Bis(*p*-nitrophenyl) Phosphate, *Inorg. Chem.*;

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(Article); 2001; 40(14); 3588-3595}. Franke et al. teach a basic, non-aqueous decontamination process, used as detoxification agent with a universal effect against chemical weapons for detoxifying military and civil technical means and devices, buildings and streets; whereby said basic, non-aqueous decontamination fluid comprises 20 to 40 wt. % of an aliphatic C₂-C₆ alcohol; 20 to 40 wt. % of an aliphatic C₂-C₆ aminoalcohol; 20 to 50 wt % of a cyclic C₂-C₆ acid amide and/or an aliphatic C₂-C₆ diamine, 0.5 to 2.6 mol/l of an alkali alkoxide and/or an alkali aminoalkoxide while Neverov et al. teach the interaction of La³⁺ with diphenyl phosphate, methyl *p*-nitrophenyl phosphate, and bis(*p*-nitrophenyl) phosphate and the ensuing catalysis of methanolysis studied in methanol under completely homogeneous conditions of known pH.

However, applicants argue that the combination of these two reference disclosures fail to render the claimed subject matter of claims 1-12 and 14-37 obvious to one skilled in the relevant art. Applicants contend that the present invention is based, at least in part, on the surprising finding that the non-radioactive lanthanide series metal ions, transition metal ions, and combinations thereof and the alkoxide ions catalyze alcoholysis of the neutral organophosphorus compound.

Applicants further state that one of ordinary skill in the art would recognize that Franke et al. teach a stoichiometric process in which the active agent is the stoichiometric amount of alkoxide, which makes the solution very basic, and that the alkoxide ion decomposes an organophosphorus compound through stoichiometric nucleophilic attack at the phosphorus atom, and the reaction stops when all the alkoxide

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is consumed. Furthermore, applicants argue that Franke et al.'s reference is deficient because it does not teach or even suggest a catalytic process involving the use of metal ions such as lanthanide series ions and transition metal ions. Applicants state that Neverov et al. relate to the methanolysis of acids - phosphate diesters - using La^{3+} as a catalyst. Moreover, applicants state that Neverov et al.'s reference is deficient because it does not teach or even suggest using La^{3+} to catalyze the alcoholysis of **neutral organophosphorus compounds**, and that Neverov et al. do not repair the deficiency of Franke et al. because they do not teach a method for decomposing a **neutral organophosphorus compound**. Conclusively, applicants contend that a person trying to solve the problem of how to decompose neutral organophosphorus compounds such as; for example, chemical warfare agents would not look to Neverov et al., because the field of phosphoric acid chemistry is not relevant.

Applicants' argument is found persuasive because these differences are not readily apparent and would not have been suggested to one of ordinary skill.

A search of the prior art failed to uncover any reference that teaches or motivates one of ordinary skill to disclose a method for decomposing a **neutral organophosphorus compound** comprising subjecting said neutral organophosphorus compound to an alcoholysis reaction in a substantially non-aqueous medium comprising non-radioactive metal ions selected from the group consisting of lanthanide series metal ions, transition metal ions, and combination, and at least a trace amount of alkoxide ions as claim by applicants.

All claims (1-12, 14-35, 37 and 42-48) are allowed.

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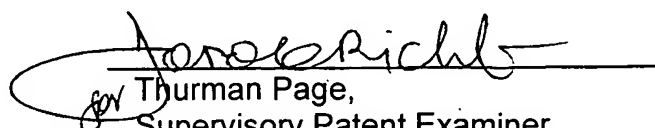
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.
Patent Examiner
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